Medium-Mu Triode—Beam Power Tube

DUODECAR TYPE

Electrical:

Heater Characteristics and Ratings:
Voltage (AC or DC) .................. 6.3 ±0.6 volts
Current at heater volts = 6.3 .......... 1.200 amp
Peak heater-cathode voltage (Each unit):
Heater negative with respect to cathode .... 200 max. volts
Heater positive with respect to cathode .... 200 max. volts
Direct Interelectrode Capacitances (Approx.):

Triode Unit:
G\textsubscript{T} to P\textsubscript{T} .................... 3.6 pf
Input: G\textsubscript{T} to (K\textsubscript{T},H) .......... 2.2 pf
Output: P\textsubscript{T} to (K\textsubscript{T},H) .......... 0.7 pf

Beam Power Unit:
G\textsubscript{1B} to P\textsubscript{B} ............... 0.34 pf
Input: G\textsubscript{1B} to (K\textsubscript{B}+G\textsubscript{3B},G\textsubscript{2B},H) ..... 11.0 pf
Output: P\textsubscript{B} to (K\textsubscript{B}+G\textsubscript{3B},G\textsubscript{2B},H) ..... 7.0 pf

Mechanical:
Operating Position ..................... Any
Types of Cathodes ...................... Coated Unipotential
Maximum Overall Length .................. 2.375"
Seated Length ......................... 1.750" to 2.000"
Diameter .......................... 1.062" to 1.188"
Dimensional Outline ............ See General Section
Bulb .................................. T9
Base ....................... Small-Button Duodecar 12-Pin (JEDEC No.E12-70)
Basing Designation for BOTTOM VIEW .... 12DZ

Pin 1—Heater
Pin 2—Triode Plate
Pin 3—No Internal Connection
Pin 4—Beam Power Plate
Pin 5—Same as Pin 3
Pin 6—Beam Power Grid No.1
Pin 7—Beam Power Grid No.1
Pin 8—Beam Power Grid No.2
Pin 9—Beam Power Cathode,
      Beam Power Grid No.3
Pin 10—Triode Grid
Pin 11—Triode Cathode
Pin 12—Heater

Characteristics, Class A\textsubscript{1} Amplifier:

<table>
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<th>Triode Unit</th>
<th>Beam Power Tube</th>
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</thead>
<tbody>
<tr>
<td>Plate Voltage</td>
<td>150</td>
</tr>
<tr>
<td>Grid-No.2 Voltage</td>
<td>-</td>
</tr>
<tr>
<td>Grid-No.1 Voltage</td>
<td>-5</td>
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<tr>
<td>Amplification Factor</td>
<td>20</td>
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<tr>
<td>Component</td>
<td>Triode Unit</td>
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<tr>
<td>---------------------------------</td>
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<tr>
<td>Plate Resistance (Approx.)</td>
<td>8500</td>
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<tr>
<td>Transconductance</td>
<td>2350</td>
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<tr>
<td>Plate Current</td>
<td>5.5</td>
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<tr>
<td>Grid-No.2 Current</td>
<td>16.5</td>
</tr>
<tr>
<td>Grid-No.1 Voltage (Approx.)</td>
<td></td>
</tr>
<tr>
<td>for plate μa=10</td>
<td>-11</td>
</tr>
<tr>
<td>100</td>
<td>-</td>
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</tbody>
</table>

**VERTICAL-DEFLECTION OSCILLATOR**

**Triode Unit**

**Maximum Ratings, Design-Maximum Values:**

For operation in a 525-line, 30-frame system:

DC Plate Voltage: 250 max. volts
Peak Negative Pulse-Grid Voltage: 400 max. volts
Cathode Current:
  Peak: 70 max. ma
  Average: 20 max. ma
Plate Dissipation: 1 max. watt

**Maximum Circuit Values:**

Grid-Circuit Resistance:
  For fixed-bias operation: 1 max. megohm
  For cathode-bias operation: 2.2 max. megohms

**VERTICAL-DEFLECTION AMPLIFIER**

**Beam Power Unit**

**Maximum Ratings, Design-Maximum Values:**

For operation in a 525-line, 30-frame system:

DC Plate Voltage: 250 max. volts
Peak Positive-Pulse Plate Voltage: 2000 max. volts
Grid No.2 Voltage: 200 max. volts
Cathode Current:
  Peak: 245 max. ma
  Average: 70 max. ma
Plate Dissipation:
  Grid-No.2 Input: 1.8 max. watts

**Maximum Circuit Values:**

Grid-Circuit Resistance:
  For fixed-bias operation: 1 max. megohm
  For cathode-bias operation: 2.2 max. megohms

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a The dc component must not exceed 100 volts.
b Without external shield.
c This rating is applicable where the duration of the voltage pulse does not exceed 15 per cent of one vertical scanning cycle. In a 525-line, 30-frame system, 15 per cent of one vertical scanning cycle is 2.5 milliseconds.
d In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.